

The Watershed System Approach

Charles B. Chesnutt

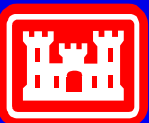
Regional Sediment Management

RSM Research & Development

Program Manager: Jack E. Davis, Ph.D.

RSM Demonstration Program

Program Manager: Julie D. Rosati



US Army Corps
of Engineers



ERDC – Coastal and Hydraulics Laboratory

RSM Research and Development Program

Regional Sediment Management...

...fitting each of our sediment management actions into the context of a regional plan.

Objective: *Engage RSM Philosophy through enabling information and technology.*



Products:

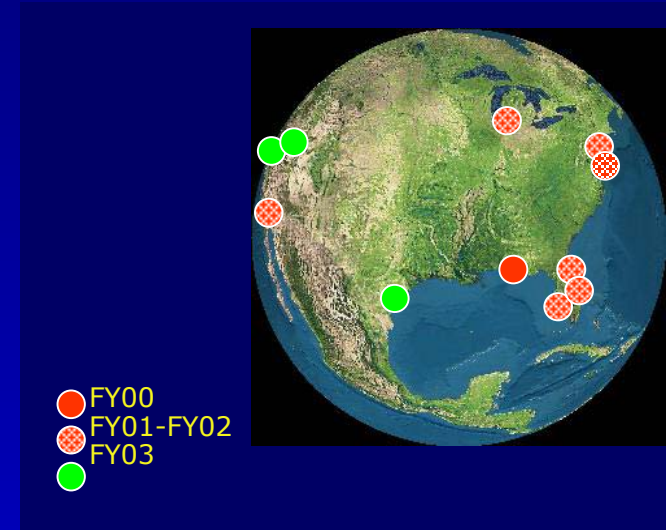
- *Sediment Modeling & Management Tools/Systems*
- *Guidance & Information* (Newsletters, Technical Notes, Technical Reports, Users manuals, EM updates)
- *RSM Website*
- *Workshops*



National RSM Demonstration Program

Status:

- Initiated FY00
- \$10 Mill Program (\$5.5 Mill to date)
- 11 Demonstrations in FY03
- Primary goals:
 - ✓ Implement RSM concepts in Corps projects
 - ✓ Identify and resolve constraints
 - ✓ Develop guidance
 - ✓ Work with partners



Perdido Pass, FL (Spring 03)

Selected Achievements:

- Enterprise RSM GIS & workshops
- Cost savings combining O&M mob/demob
\$2 Mill (SAJ – 2 projects)
- Creation of East Moriches Island, NY
(endangered bird island habitat)
- CHETNs www.wes.army.mil/rsm
- “RSM Primer” and Policy Report
(drafts)

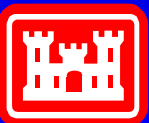


The National Shoreline Erosion Control Development and Demonstration Program (Section 227)

**Program Manager:
William R. Curtis**



Natural Y-head groins Kehei, Maui



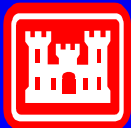
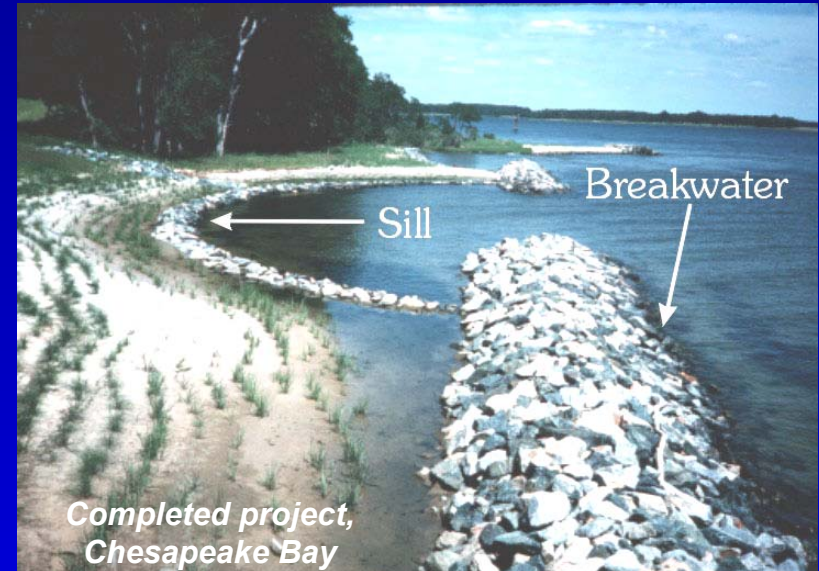
The National Shoreline Erosion Control Development and Demonstration Program

Section 227

Focus: Development and demonstration of innovative or non-traditional coastal erosion abatement technologies

Objectives:

- Quantitative evaluation of beach erosion control technology
- Erosion challenges addressed through cooperative effort with other Federal and non-federal agencies
- Technical transfer program targeting technical specialists, policy makers and the public
- ❖ 14 demonstration projects underway at a variety of morphologic settings on the open coast and sheltered shores of the Atlantic, Pacific, Great Lakes and Gulf of Mexico



Web Site: <http://limpet.wes.army.mil/sec227/index.html>

US Army Corps of Engineers

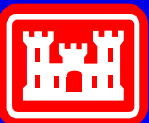
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Monitoring Completed Navigation Projects Program

**Program Manager:
Robert R. Bottin, Jr.**



Morro Bay, CA



Monitoring Completed Navigation Projects Program

Focus: Evaluates the performance of completed civil works navigation projects

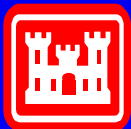
Objective: Obtain information (hydrodynamic, sedimentation, and/or structural elements) for verifying or improving navigation project performance

- Monitoring Techniques:
 - Comprehensive survey on a one-time basis
 - Periodic Inspections to observe long-term environmental response
- Pull and Push effort for technology transfer (obtain benefits of lessons learned and apply)
- Cooperative effort with District



Ongoing project, Tom Beville Lock and Dam, AL

❖ **32 project sites monitored on the Atlantic, Pacific, Gulf of Mexico, and Great Lakes coast also Alaska, Hawaii, Guam and Puerto Rico**



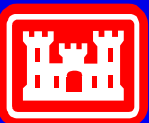
Web Site: http://chl.wes.army.mil/research/navigation/mcnp_site/default.htm

Coastal Field Data Collection Program

**Program Manager:
William Birkemeier**



Field Research Facility, Duck, NC



Coastal Field Data Collection Program

New coastal knowledge through measurements

→ Objectives:

- To advance coastal engineering through research & operational field measurements
- To support Corps requirements for field measurements:
 - Primarily waves (both hindcast & measured)
 - Participation in the national *Integrated Ocean Observing System* (IOOS) with 13 other agencies

→ Approach:

- Field Research Facility, Duck, NC
 - Research, long-term observations, experiments
- Field Wave Gauging
 - Coastal Data Information Program, NDBC directional sensors
- Southern California Beach Processes Study
 - Regional coastal monitoring, innovative techniques
- Wave Information Study
 - 10+ years of 3-hourly hindcasted wave data
- Pacific Island Land-Ocean Typhoon Experiment (new)
 - Field measurements for the study of typhoon impacts in the islands



Coastal Engineering Research Board



*Photo taken at 73rd meeting
Avalon, NJ (March 2002)*

Coastal Engineering Research Board

Advisory board to the Chief of Engineers

Provides broad policy guidance and review of plans and fund requirements for the conduct of research and development of research projects in consonance with the needs of the coastal engineering field and the objectives of the Chief of Engineers

Board Composition:

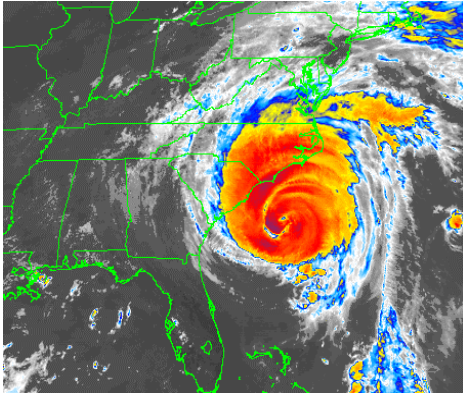
- * Seven members
 - President of the Board - military position of Director of Civil Works
 - Three military members - division engineers of coastal divisions
 - Three civilian members - outstanding in the broad field of coastal engineering
 - Executive Secretary - Commander of the US Army Engineer Research and Development Center (ERDC)

CERB Current Initiatives:

- Regional Sediment Management
- Shoreline Erosion Control and Demonstration Projects (Section 227)
- National Shoreline Management Study

USACE/FEMA

Hurricane Evacuation Studies Program



USACE/FEMA Hurricane Evacuation Studies Program

U.S. Mainland ~ U.S. Islands

*“Planning protection from hurricane threat and sharing public reaction information
Among all levels of government, from the Federal to the Family”*

FEMA ~ Leadership and coordination development

USACE ~ study and program management / product

NOAA/NWS ~ meteorology and oceanography

DOT ~ highway networks

NEMA ~ state coordination / product relevancy

National Shoreline Management Study

**Program Manager:
Robert W. Brumbaugh, Ph.D.**

National Shoreline Management Study

Comprehensively examine the status of the Nation's shoreline in order to provide a basis for future Administration and Congressional decisions and actions regarding shoreline management

Objectives:

- ✓ Examine the extent, cause, economic and environmental affects of shoreline changes (erosion and accretion)
- ✓ Describe current programs (Federal, state and local) involvement in shore restoration, renourishment and coastal management
- ✓ Explore ideas concerning a systems approach to sand management
- ✓ Coordinate with the ERDC-CHL (RSM & NSECD) and other Corps field experts